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Remarks

Claims 1 and 6-23 are currently pending in the above-captioned matter; claims 1, 12 and 14 are independent. The claims have been amended to put them in better form for consideration on appeal; specifically, claim 23 has been amended. Support for the amendment is found at page 4 of the specification. No new matter has been added.

Applicants respectfully acknowledge the Examiner's statement that claims 11, 18 and 21 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

35 USC §103 Rejections

Claims 1, 6, 8-10, 12, 14, 16-17, 20 and 22-23 were rejected under 35 U.S.C. 103(a) as being unpatentable over International Application WO 91/19836 A1 (the WO '836 patent document). Claims 1, 6-10, 12-17 and 19-20 and 22-23 were rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,525,431 to Kanamaru et al. (the '431 patent). Applicants respectfully traverse these rejections. The WO '836 patent document and the '431 patent do not teach or suggest the unique combination of parameters required by Applicants' independent claims which result in a nonsludging zinc phosphate treatment liquid composition.

The WO '836 patent document teaches 3-20 g/L phosphate ions and states:

In determining these concentrations, phosphoric acid and any anions produced by its ionization are considered as their stoichiometric equivalents of phosphate ions. When one, two, or all of these components falls below these lower limits, the formation of: a. film which achieves the object of the present invention becomes almost impossible. On the other hand, exceeding the given upper limits not only entails high economic costs, but it becomes problematic to obtain a highly adherent film as the concentration increases.

WO '836 patent document Page 4, lines 15-24.

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Thus, the WO '836 patent document places an upper limit on phosphoric acid of 3-20 g/L, even in the absence of all other sources of phosphate ions and teaches against higher concentrations. Claim 1 recites mole per liter phosphoric acid amounts of 0.25 to 0.50 mol/L, which equate to approximately 24.5-49 g/L. This feature is neither taught nor suggested by the WO '836 patent document, which teaches against such high concentrations.

The WO '836 patent document also requires a weight ratio of zinc ions to phosphate ions in the range of 0.7 - 1.4, see page 4, lines 27-30, which range is approximately equal to molar ratios in the range of 1 - 2. Each of claims 12 and 14 require a molar ratio of zinc to phosphoric acid of less than 0.91, which is outside the molar ratio range required by the WO '836 patent document. The molar ratio of zinc to phosphoric acid of less than 0.91 is neither taught nor suggested by the WO '836 patent document.

Likewise, the '431 patent teaches a range of 1-10 g/L of nitric acid, see Col. 15, line 51-55. Each of claims 1, 12 and 14 require more than this amount. Claim 1 recites mole per liter nitric acid amounts equating to approximately 41-56 g/L. Claims 12 and 14 recite mole per liter nitric acid amounts equating to at least approximately 18.9 g/L and 12.6 g/L, respectively. None of these features are taught or suggested by the '431 patent.

In order to support a rejection under 35 U.S.C. §103, the Office must establish that there was some suggestion, either in the reference or in the relevant art, of how to modify what is disclosed to arrive at the claimed invention. In addition, "[s]omething in the prior art as a whole must suggest the desirability, and, thus, the obviousness, of making" the modification to the art suggested by the Examiner. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 U.S.P.Q. 2d (BNA) 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988). That is, although the Office may suggest that the teachings of a primary reference could be modified to arrive at

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the claimed subject matter, the modification is not obvious unless the prior art also suggests the desirability of such modification. In re Laskowski, 871 F.2d 115, 117, 10 U.S.P.Q.2d (BNA) 1397, 1398 (Fed. Cir. 1989).

The ranges taught by the '431 patent do not overlap the ranges claimed in independent claims 1, 12 or 14. Likewise, the ranges of the WO '836 patent document do not overlap the ranges claimed in independent claims 1, 12 or 14. There is no motivation to combine the references in an attempt to achieve Applicants' claimed invention. The '431 patent is directed to a pretreatment for sheet steel that is applied before phosphating to form an oxide coating. The '431 patent does not recognize the problem of sludge formation in zinc phosphating. Neither reference teaches suggests the solution to the problem claimed by Applicants. There is no teaching or suggestion in the art of record of how to modify the prior art or of the desirability of modifying the prior art in a manner that would achieve Applicants' invention. Accordingly, it is respectfully requested that the rejection under 35 USC §103 be withdrawn.

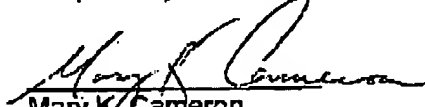
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Conclusion

Applicant requests reconsideration in view of the amendments and remarks contained herein. Applicant submits that the claims are in condition for allowance and a notice to that effect is respectfully requested. Should the Examiner have any questions regarding this paper, please contact the undersigned.

Respectfully submitted,



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